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Towards global certification of solar collectors

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Abstract

The EN/ISO 9806 standard for collector testing is expected published in 2013 - and could then form a basis for a global collector certification scheme.
The objective is to propose a way towards global certification of solar collectors - and to make the first steps.
Introducing a global certification scheme is an ambitious task. A pragmatic approach could be to work "step by step" e.g.: First investigate possibilities for harmonizing the main existing certification schemes. And then - if this shows successful - to harmonize with more existing certification schemes and implement the harmonized scheme in countries with no certification scheme.
Two existing successful certification schemes are Solar Keymark[i] and SRCC[ii]. Solar Keymark covers around 90 % of the European solar collector market and SRCC has similar success at the North American market. Some cooperation is already taking place at testing level between the two certification schemes - giving a good basis (together with the up-coming EN/ISO standard for collector testing) for aiming at a common certification scheme.
Both Solar Keymark and SRCC are already "spreading" out in neighboring regions. Similar schemes are being established in e.g. North Africa and South America. Next step could be to implement the common certification scheme in interested countries, adapting the scheme rules to new conditions if necessary.

Keywords: Solar collectors; international standards; global certifcation

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1. Introduction

The idea of establishing a global certification scheme has been discussed in the IEA-SHC[iii] Task 43[iv] and amongst the participants in the European project IEE/QAiST[v].

As a result of these discussions, a coordinated revision of the European collector standard EN 12975 and the international collector standard ISO 9806 is going on now - with the aim of establishing a common EN/ISO standard for collector test methods.

When such common international standard is realised, it would be possible to establish a global collector certification scheme.

Such global certification scheme could open up the world market for collectors as then this one certificate can be used all around the world to compliance with the EN/ISO "world collector standard".

2. Background

The Solar Keymark certification scheme has been very successful in Europe - and works also for overseas products on the European market. But until now it was (due to rules of the owner of the mark: CEN[vi]) only possible for European certification bodies to participate in the certification scheme and issue licences. Non-European manufacturers do not have the possibility to use local certification bodies. Even stricter for some national certification scheme like the North American SRCC certification scheme - here everybody has to use one specific certification body.

To illustrate problem: At present, if you e.g. want to sell your collector in both EU and USA, you need both the Solar Keymark and the SRCC certificates - and hence double testing and certification are required. In the future ONE "Global Solar Q-Mark" should allow you to sell in all countries in all continents.

3. Step by step approach

Introducing a global certification scheme is an ambitious task. A pragmatic approach could be to work "step by step" e.g.: First investigate possibilities for harmonizing the main existing certification schemes. And then - if this shows successful - to harmonize with more existing certification schemes and implement the harmonized scheme in countries with no certification scheme.

Two existing successful certification schemes are Solar Keymark and SRCC. Solar Keymark covers around 90 % of the European solar collector market and SRCC has similar success at the North American market. Some cooperation is already taking place at testing level between the two certification schemes - giving a good basis for aiming at a common certification scheme.

Both Solar Keymark and SRCC are already "spreading" out in neighboring regions. Similar schemes are being established in e.g. North Africa and South America. Next step could be to implement the common certification scheme in interested countries, adapting the scheme rules to new conditions if necessary.

The Solar Keymark Network has established a work group with the task to investigate different possibilities for establishing a global certification scheme for solar thermal collectors. This work group with representatives from both Europe and North America will prepare a document with the objective to gather all necessary information to conclude on the best path towards global certification.

This project (funded by the SCF) will be divided in three main areas:

- Analysis of existing global certification schemes or international agreements in other fields, like for example electric (CCA, HAR, ENEC or IECEE) or food (GLOBAL GAP) in order to learn the mechanisms in different models that are working successfully

- Analysis of as already existing national/regional certification schemes for solar collectors throughout the world, in order to find out the different methods of work and also pinpoint areas of growth
- Comparison of Solar Keymark and SRCC to focus on the differences that might need flexibility or changes on both sides

The project is due for March 2013 and should conclude with a proposed course of action. However there will be a presentation of the first part in September 2012 in Madrid, Spain with an open discussion and feedback to the work group.

Having once achieved one common certification scheme for two major regions of the world - it would be attractive for other countries and regions to join in order to get easy access to the big common market - and the more countries joining the more attractive it will be to join - a good circle is created.

It is important to say, that to join the "common market" for solar collectors the country must of course give access to its own market without any technical trade barriers.

4. How it could work

With respect to test methods, the global certification scheme should refer directly to the upcoming EN/ISO 9806 series concerning test procedures for efficiency and reliability/durability for solar thermal collectors. Requirements should be based on requirements from EN 12975-1 and SRCC Standard 100.

The certification scheme should be a so-called 3rd party certification scheme - involving independent certification bodies, test labs and inspectors fulfilling certain requirements.

The main components in the scheme are:

- Factory inspecting - an inspector is checking the quality management system of the manufacturer, initial inspection before certification - and then surveillance inspection regularly e.g. every year
- Product testing - a test labs is testing collectors - collectors for testing are taken out from production line by random sampling

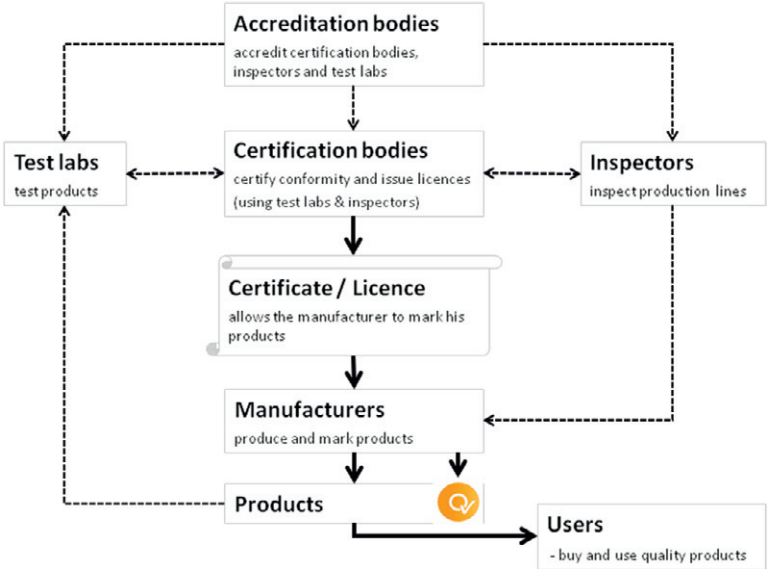

Fig. 1. Principles in a 3rd party certification scheme

In fig. 1 the principles are shown:

- The accreditation bodies are checking the certification bodies, test labs and inspectors (and they are checking each other too)
- The certification bodies are checking if the requirements in the certification scheme are fulfilled based on test and inspection reports. The certification bodies issue the license to mark the product to the manufacturer (if requirements are fulfilled)
- The test labs test the products (collectors) according to the standards
- The inspectors inspect production lines (and sample products for testing)
- Manufacturers produce products - and mark them

5. How it could be organised

Inspired by the Solar Keymark Network an organizational framework around the certification scheme is proposed: "Solar Q Network". The idea is that both industry and the actors working within the certification scheme are involved and that they are all represented in a balanced way in the organization. See fig. 2.

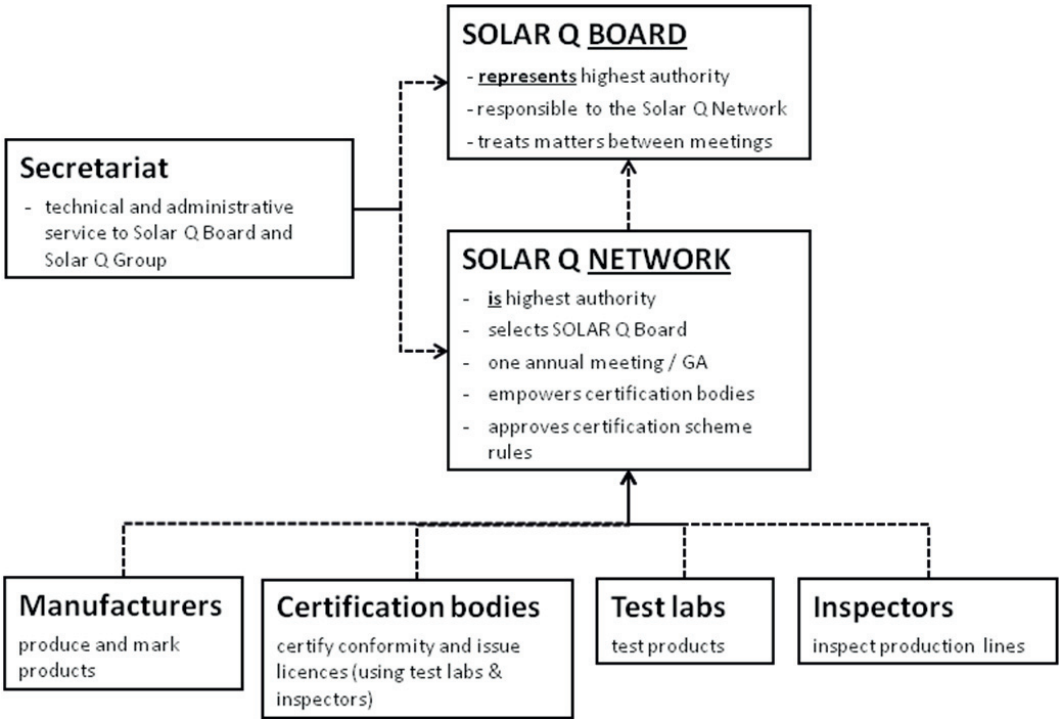

Fig. 2. How the global certification scheme could be organized

Acknowledgements

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Workshop on global certification of solar collectors

On September 5th (09:00- 12:00) there will be a "Workshop for Global Mark" at AENOR in Madrid, Spain; more information will be given at the Solar Keymark web site: www.solarkeymark.org.

[i] Solar Keymark: The CEN Keymark certification scheme for solar thermal products, www.solarkeymark.org

[ii] SRCC: Solar rating and Certification Corporation, www.solar-rating.org

[iii] IEA-SHC: International Energy Agency - Solar Heating and Cooling, http://www.iea-shc.org

[iv] IEA-SHC Task 43: IEA-SHC Task on "Solar Rating and Certification", http://www.iea-shc.org/task43/

[v] IEE/QAiST: Intelligent Energy Europe Programme / Quality Assurance in Solar Thermal, http://www.qaist.org/

[vi] CEN: Comité Européen de Normalisation - umbrella organization for the national European standardization bodies. http://www.cen.eu

[vii] IEE: Intelligent Energy Europe Programme, http://ec.europa.eu/energy/intelligent/

[viii] SCF: Solar Certification Fund. Fund established by the Solar Keymark Network with aim of supporting work on internationa standardisation and certification for solar thermal products.